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SURGICAL TREATMENT

OF

NASO-PHARYNGEAL CATARRH.

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BY

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NEW YORK CITY.

(Read before the American Medical Association.)

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THE COUNTY OF N. Y., ETC.

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SURGICAL TREATMENT OF NASO-PHARYNGEAL CATARRH.

By D. H. GOODWILLIE, M.D., D.D.S.,

NEW YORK.

OF the etiology of naso-pharyngeal catarrh, I desire only to say in reference to those cases that shall occupy our attention at this time, that their history, in many instances, commences in early life, even in infancy. Particularly is this the case in deviations and exostosis of the nasal septum.

The sides of each nasal fossa contain the three turbinated bones, and throw the mucous membrane that covers them into folds, so that in a small space a large amount of mucous surface is exposed—a wise provision for tempering and cleansing the air that passes over it to the lungs. Experiments have shown that air respired through the nose is raised in temperature two degrees higher than that respired by the mouth.

Respired air must pass through *both* the nostrils *alike* to produce a healthy respiration.

In the same proportion that respiration is prevented through the nose, the gateway to the lungs, will there be catarrhal conditions of the upper air passages, and in many cases reaching the lungs ultimately.

Of the passages through the nostrils the inferior meatus is the most important, as it is the chief respiratory passage for air and for the carrying off, in a great measure, the nasal secretions. For the latter purpose it is lined with ciliated columnar epithelium. The mucous membrane is quite vascular, and consequently subject to very sudden engorgement.

I do not propose to say anything respecting catarrhal conditions that require *medical treatment only*, but shall speak of such cases as have passed that point, and can only be relieved by surgical interference.

Some of the pathological conditions requiring surgical treat-

ment, to which I desire at this time to call attention, are the following, viz.:—

1. *Exostosis*. 2. *Deviated nasal septum*. 3. *Hypertrophy of the erectile cavernous tissue on the turbinated bones*. 4. *Polypi*. 5. *Necrosis from struma or syphilis*. 6. *Chronic antrum disease*. 7. *Chronic maxillary abscess from tooth disease*.

The time allotted me will only suffice for the consideration of some of these, which I will endeavor to illustrate by a few cases and by means of diagrams and wax models.

Exostosis of the turbinated bones is not so frequent as are exostoses in the vomer when associated with deviated septum. Such growths are attended usually by pains of a neuralgic character; they prevent respiration, and by pressure cause sloughing and necrosis of adjacent parts.

Exostosis with deviations of the septum is of more common occurrence. Wherever the vomer takes a sharp deflection there is often found an exostosis on the convex side just at the greatest part of the curve. When this occurs along the line and into the inferior meatus, as it more often does, it gives a great deal of catarrhal trouble by preventing free respiration and the passage outward of the nasal secretions, which not being changed by a free respiration become fetid by decomposition.

Deviations of cartilaginous septum are quite numerous—curves in between the bony septum and the columna in many directions. Dislocation of the lower end of the septum with displacement of the nasal spine also produces abnormal respiration.

Hypertrophy of the erectile cavernous tissue covering the inferior turbinated bones.—Some years ago Dr. Henry J. Bigelow, of Boston, in an article in the *Boston Medical and Surgical Journal* for April 29, 1875, stated that he had found “a remarkable and well-formed cavernous structure at least upon the middle and inferior turbinated bones. The difference in size of the distended and collapsed cavernous bodies is quite striking, and is best seen upon the inferior turbinated. Collapsed, the outline and dimensions are nearly those of its attenuated bony framework. Distended, it becomes an angry, turgid mass of uneven surface and livid color, completely closing the lower nostril. A pouch-like dilatation projects from the rear of the bone, increasing its length, and, with the aid of a blowpipe, readily showing on section to the naked eye cavernous cells. It is this reticulated pouch that is seen with the mirror at the back

of the nares. Above is seen the middle turbinated mass similarly distended, and if the injection of the whole membrane is considerable, the nasal septum also swells to nearly the thickness of one-quarter of an inch. If inflated and dried, the cells project upon the surface. A section gives further evidence of a cavernous structure with closely juxtaposed cavities tolerably uniform in size and equally distributed, approaching quite nearly both the mucous surface and the bone. They communicate by irregular apertures while minute bands or septa traverse and connect their common walls.

"A wet microscopic section exhibits thin trabeculæ and walls, composed mainly of connective tissue, presenting cavities of unequal dimensions, and closely resembling the cavernous structure of the penis; although the smooth muscular elements, as also the tunica albuginea of the latter, are somewhat more pronounced, as might be anticipated from the comparative erectile tension of this organ."

I pass around for your inspection two wax models of cleft palates, showing the extensive hypertrophy of the tissues covering these bones. When fully erected, they entirely fill up the cleft. In one will be observed this condition, while in the other there is a state of non-erection.

By experiment made on them, I found that anything that would excite the salivary and muciparous glands to increased action caused an erection of this hypertrophied erectile tissue. When the exciting cause was removed, after a short time it receded.

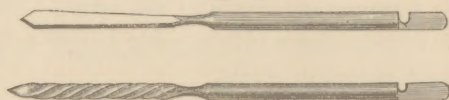
This erection and collapse is a physiological fact in the normal condition, and is intended to purify the tidal air passing in respiration from all impurities, and so protect the pulmonary organs against disease. The hairs in the vestibule of the nostrils and this erectile tissue are *faithful sentinels* to arrest impurities in the respired air.

By a constant irritation of this erectile tissue by impurities in the respired air, by a mechanical irritation caused by a constant and forcible blowing of the nose in chronic catarrh, the effect of which is felt on the anterior part of the inferior turbinated bone just within the vestibule, a hyperplasia is thereby set up, which results in so thickening this tissue that normal respiration is very much interfered with, and, in some cases, entirely

prevented. To the above causes may be added, in many cases, a constitutional predisposition to catarrhal diseases.

Treatment of exostosis of the turbinated bones, when large, consists in drilling the enlargement at its base by means of the surgical engine, when it may be removed with the nasal forceps. (See Fig. 1.)

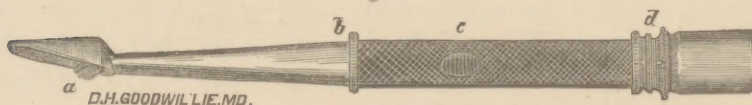
Fig. 1.



Cutting Drills.

The exostosis on the vomer is removed by the revolving multiple knife carried through the nostrils to the pharynx, inclosed within the sheath, so as not to cut any tissue except the exostosis. The small exostoses of the turbinated bones are removed in the same way. (Fig. 2.)

Fig. 2.

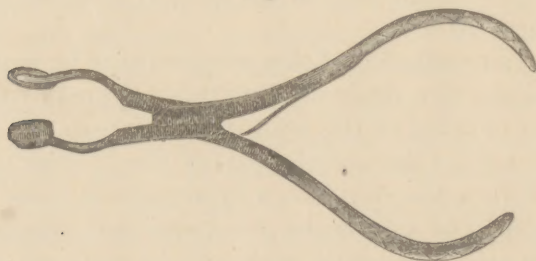


Knife (a) within the sheath. Revolving Knives.

For the treatment of the *deviated cartilaginous septum*, I have found no operation so successful as removing a section containing the bend, by means of the excising nasal forceps¹ devised some years ago.

One blade contains the circular or oval knife, and the other is flat, against which the knife comes when it has cut its way through the septum. (Fig. 3.)

Fig. 3.



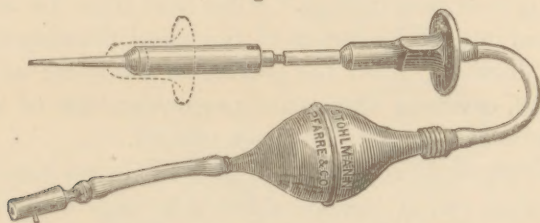
¹ My attention has been called to a somewhat similar instrument described in Dict. Encycloped. des Sciences Méd. et Chirurg., article Nez.

It requires some half a dozen forceps of different sizes and shapes to meet every case.

In dislocation of lower end of cartilaginous septum, make an incision over the end of the dislocated and protruding cartilage down to the cartilage, denude it of the periosteum, push this back and then amputate the protruding cartilage (and nasal spine also if it is displaced), replace the denuded soft tissues and hold them together by small sutures.

The *hypertrophied erectile tissues* on the turbinated bones are removed by means of the galvano- or thermo-cautery. For the Paquelin cautery I have devised a new handle, which is held between the two fingers and thumb. In the office, use the condensed air instead of forcing the air by the hand-balls. The cautery is very efficiently held and the force of the air easily controlled by the thumb. The thermo-cautery can only be used in the anterior nares. (Fig. 4.)

Fig. 4.

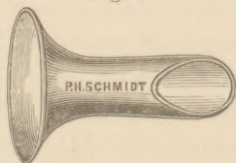


Dotted lines represent the shield through which the cautery passes. The part of the cautery within the shield is covered over with asbestos to protect the vestibule from the heat.

The galvano-cautery is by far the most efficient cautery to be used in the nose. By the use of properly constructed electrodes it can be used anywhere in the nose, pharynx, or larynx.

The vestibule of the nostrils is protected from the heat by a shield made of glass and asbestos. The lower part of the shield is flanged so as to be easily held between the fingers. The top of it embraces the part to be cauterized. The electrode, when heated to a high heat, is passed through the shield on to the parts to be removed. (Fig. 5.)

Fig. 5.



Chronic antrum disease is a frequent source of naso-pharyngeal catarrh. This commences almost always by a decomposed dental pulp opening into and setting up trouble in the antrum. With this there is more or less facial neuralgia. I do not think this

is often recognized, except perhaps in extreme cases where extensive necrosis exists.

The proper treatment is to extract the molar and trephine through the alveolar process into the lower part of the antrum. If the disease has existed for any length of time, the naso-antrum foramen will be enlarged, and occasionally the entire nasal wall and inferior turbinated bone will be necrosed. Successful treatment requires a large opening in the nasal wall, so that it may give free exit to the discharge and allow proper cleansing of the cavity. It must be faithfully dressed by washing it out with thymol or carbolic acid and water.

Chronic maxillary abscess of the second or third molars occasionally discharges into the pharynx and produces catarrhal conditions. Extract the tooth, and open well into the abscess, and keep it open until it granulates from the bottom to the surface.

After all surgical operations the patient is *positively forbidden* to blow the nose for the first twenty-four hours, as a preventive measure against hemorrhage. After that time the nose is freed of clot and mucus by means of the nasal dressing-forceps and the nasal douche. Then the powder of iodoform and camphor is blown in, covering the entire mucous surface of the nose or antrum when that cavity has been opened.

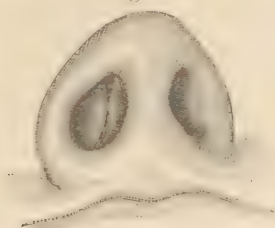
In cases where an anæsthetic is given I always commence with nitrous oxide, and if the operation is to be prolonged, continue with some other anæsthetic. The head of the patient is securely fixed in a head-rest, preventing any motion during the operation.

The following cases were all severely troubled with naso-pharyngeal catarrh. There being stenosis of the nostrils, the discharges were either expectorated or swallowed.

CASE I. *Hypertrophy of erectile tissue of both inferior turbinated bones.*—G. G.—sent to me by Dr. D. Monro, Ontario, Canada—aged 29 years, of Ontario, Canada, single, has had catarrh for many years. Formerly had much blowing of the nose, but now has so much stenosis of anterior nares that the discharges are expectorated; respire through the nose very little; voice, in consequence, quite nasal in tone. Slight curve in the cartilaginous septum to the left. Soft tissue over both inferior turbinated bones hypertrophied; the right one the largest, as it fills up the curve in the septum. Rhinoscopic appearances reveal enlargement of tissues on inferior turbinated bones, and also on

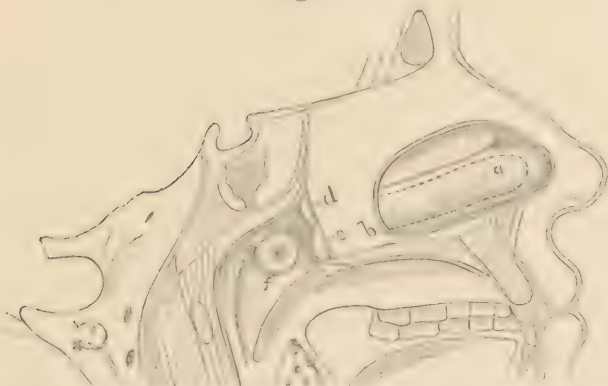
each side of the septum. Inferior meatus nearly filled up by the hypertrophy. Uvula very much hypertrophied and elongated. Slightly deaf in both ears. Pharyngeo-Eustachian opening much enlarged, with two on one and three on the other of fibrous bands attaching it to the pharyngeal folds. (See Figs. 6 and 7.)

Fig. 6.



Hypertrophy of inferior turbinated within the vestibule.

Fig. 7.



a, hypertrophy on inferior turbinated filling the inferior meatus, *b*, and seen also behind the posterior septum at *c*. Dotted lines represent the normal size of inferior turbinated bone. *d* represents an enlargement on the septum. *f*, pharyngeo-Eustachian opening with three fibrous bands.

Treatment.—Amputated uvula. Removed the anterior part of the hypertrophy on inferior turbinated bones by the thermo-cautery, and the posterior part by the galvano-cautery, under anaesthesia produced by nitrous oxide. Cut the adhesions at the Eustachian opening without an anæsthetic. Twenty-four hours after each operation the nostrils were cleaned out by the forceps, the nasal douche cautiously used, and the powder applied. For a short time after the operation this dressing was made twice a day.

Not much benefit in respiration is experienced by the patient

during and for some time after the operation, as the cauterizing excites a free discharge from all the muciparous glands of the nose and pharynx, and in consequence the nostrils are quite stuffy. But as the parts heal and contract, and the air, the natural element, passes over them, there comes a sense of relief. This patient being a large manufacturer, he could only remain under treatment six weeks, but much was accomplished in that time, thanks to the patience of my patient. His respiration was fully restored and voice much improved. Small scabs over the last places cauterized, some nasal secretion, as the small scabs kept up an irritation in the nose, but as they heal the secretion becomes normal.

CASE II. Loss of singing voice from hypertrophy of erectile tissue on inferior turbinated bones.—The following letter from the family physician gives the history, diagnosis, and the result of treatment in the next case—that of a prominent singer:—

NEW YORK, May 28, 1880.

TO D. H. GOODWILLIE, M.D.

MY DEAR DOCTOR: On the 26th of October, 1879, I sent you for treatment Mrs. A. B., æt. 26. The following is the history of the case: The patient was one of our best contralto singers; when suddenly she noticed a difficulty in emitting her head notes, and little by little lost her singing voice almost completely. Being the family physician I was consulted, and, after a laryngoscopic and rhinoscopic examination, I was convinced that all the trouble was in the nasal cavities. I found on each side a thickening of the mucous membrane and hypertrophy of the soft tissues over the turbinated bones. The occlusion was nearly complete, leaving very little respiration through the nose. Your diagnosis confirmed mine, and putting the patient in your hands you began the treatment that terminated so successfully. Now I am happy to state that the result was very gratifying to my patient.

After the first operation her voice began to return, and after the last operation she was able to appear in public on April 22, 1880, and sang four times with *encores*.

Receive, my dear doctor, with my congratulations for such a success, the expression of kindest regards.

Yours very truly,

L. DE BREMONT, M.D.

From the shock from the loss of her voice she had become anæmic, and suffered from indigestion, constipation, headaches, and insomnia.

Treatment.—Prohibited the use of wine, tea, or coffee, and recommended milk diet with farinaceous food. The milk to be taken warm, a teacupful at a time, with a very little lime-water. Gave also elix. gentian and tinc. of chloride of iron. The body to be sponged night and morning with salt water and bay rum. Flannel to be worn next the skin, which she had never done before.

The hypertrophy was removed by means of the cautery in three operations under nitrous oxide.

She now looks hale and hearty, no indigestion or constipation, has gained more than twenty pounds in weight, no insomnia, and voice regaining its strength after having lost it for some three years.

(In the wax model of this case you can see, just within the vestibule, the passage nearly closed up. It looks very much like a half of a red cherry. The other model exhibits the nostrils after the operation for its removal.)

CASE III. *Hypertrophy of tissue on infra-turbinate bone, with deviation of cartilaginous septum.*—S. M., of Alabama, sent me by Dr. L. B. Bangs. In early life was troubled with running from the nose, but in adult age the anterior nares became partially closed, then expectoration increased. Went abroad, and in Germany received treatment by cauterizing the enlarged pharyngeal follicles without any benefit. On examination found lungs healthy. A severe naso-pharyngeal catarrh giving him great trouble. Thick mucus running down on each side of the vertebral ridge from the nares. Pharynx granular, with patches of a dry, smooth surface where the follicles had suppurated or been destroyed by the cautery. Cartilaginous nasal septum deviated into right nostril, with hypertrophy of soft tissue on both inferior turbinated bones. Very imperfect respiration. Smelling much impaired.

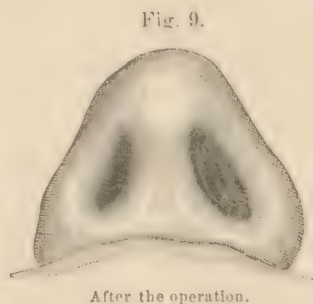
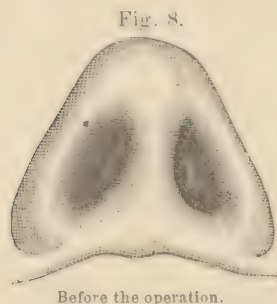
Treatment.—Removed oval section $\frac{1}{2} \times \frac{5}{8}$ inch of bend of septum with the excising nasal forceps. This operation opens up right nostril and improves his respiration.

Six months after this first operation, removed small pedunculated polypus from right nostril posterior to the section; also

by the cautery the hypertrophy on left inferior turbinated bone, without an anæsthetic.

Two months after his return home, he writes that his respiration is good, and catarrhal discharge very little and gradually decreasing.

CASE IV. *Deviated septum*.—Dr. Herman Knapp sends me H. E. C., a law student, with the cartilaginous nasal septum deviated into the left nostril, preventing respiration, causing catarrhal trouble, with some defect in his sight. On October 22, 1879, in the presence of Drs. Knapp, Farnham, Robinson, and Bozeman, I removed, with the excising nasal forceps, the bent part of the septum. This restored respiration and gave him great relief. (Figs. 8 and 9.)



CASE V. *Dislocation of cartilaginous septum*.¹—E. G. (referred to me by Dr. C. R. Agnew) has been suffering for many years with catarrh. While it was at first nasal he was in the habit of placing the thumb of the right hand against the right side of his nose when he blew it (the catarrh being in a great measure from the left nostril). Found the septum and nasal spine dislocated into the vestibule of the left nostril and protruding outside, pushing to the right the columna nasi. Respiration was entirely prevented from the left nostril, and not perfect in the right. Has deafness of left ear.

Treatment consisted in making an incision over the protruding end of the septum and spine, denuding the soft parts, pushing them back, and amputating the septum with one of the excising nasal forceps. The soft parts were brought together again, and united by sutures. This restored respiration, the good effect of

¹ Canada Medical Record, December, 1879.

which was seen by great improvement in catarrh and also in the hearing.

CASE VI. *Hypertrophy of erectile tissue and deviation, with exostosis of nasal septum.*—F. P., from Westchester Co., N. Y. Has had nasal catarrh for many years; now air and the mucous discharge do not pass freely out of the anterior nares, in consequence of an enlargement on the inferior turbinated bones and a deviation with exostosis of the septum into the inferior meatus. Has also chronic follicular pharyngitis; he suffers now from post-nasal trouble; snores in his sleep, from imperfect nasal respiration; takes cold readily and has sore throat; hawks and expectorates to relieve himself of the naso-pharyngeal discharge.

Operated under an anæsthetic, and removed hypertrophied erectile tissue with the galvano-cautery. The deviation and exostosis were removed by means of the revolving knives (Fig. 2) and surgical engine. The inferior meatus is now quite free, and he breathes, sleeps, and eats well, or, as he expresses it, has a "wonderful amount of comfort now."

The following gentlemen were present at the operation: Drs. F. N. Otis, J. C. Hutchinson, H. P. Farnham, and E. D. Hudson, Jr.

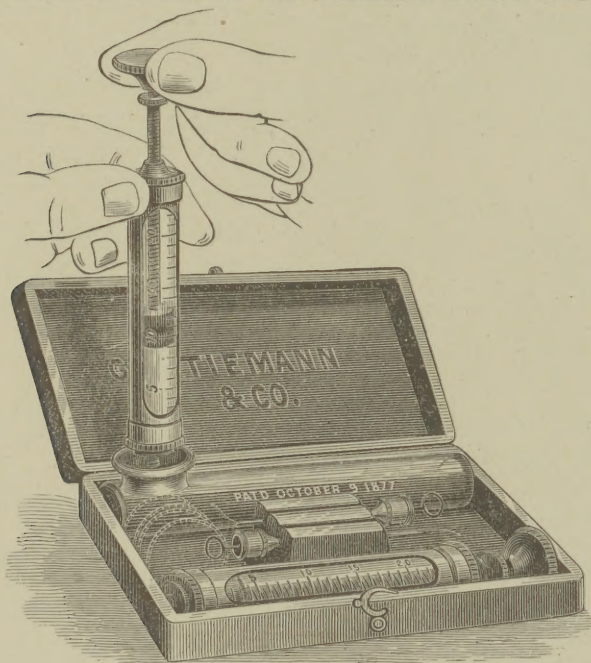


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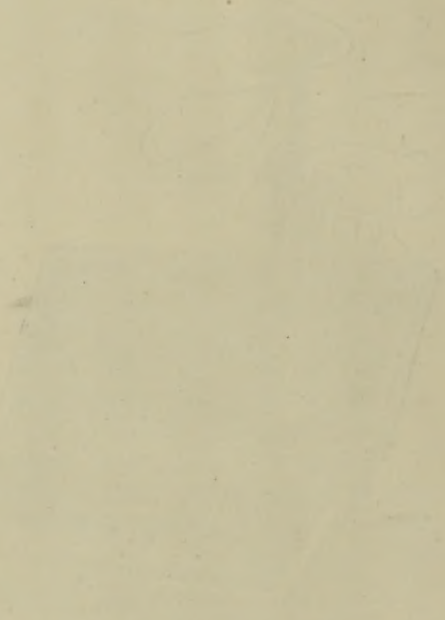
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